AMENDMENTS TO THE CLAIMS

1-26. (Canceled)

27. (Currently Amended): An active matrix liquid crystal display apparatus, comprising:

a pixel having a switching transistor, wherein the switching transistor includes a gate electrode, a source electrode, and a drain electrode that is connected to a pixel electrode;

a data signal line connected to the source electrode;

a gate signal line connected to the gate electrode; and

a gate driver connected to the gate signal line, said gate driver including a first voltage source, a second voltage source, and a switch for selectively applying, in response to gate control signals, a reference potential, the first voltage, or the second voltage to the gate signal line, wherein the gate signal line is electrically connected to the gate electrode;

a data driver connected to the data signal line, said data driver for selectively applying a data signal having a data signal voltage to the data signal line, wherein the data signal line is electrically connected to the source electrode; and

a gate controller for selectively applying gate control signals to the gate driver;

wherein the gate controller applies gate control signals that cause the gate driver to apply the first voltage to the gate signal line during the application of the data signal to the pixel electrode through [[on]] the data signal line;

wherein the gate controller applies gate control signals that cause the gate driver to apply the second voltage to the gate signal line after the application of the first signal voltage, but during the application of the data signal to the pixel electrode through [[on]] the data signal line;

wherein the gate controller applies gate control signals that cause the gate driver to apply the reference potential to the gate signal line after the application of the second signal voltage

but during the application of the data signal to the pixel electrode through [[on]] the data signal line;

wherein the first voltage is greater than the data signal voltage and turns on the switching transistor;

wherein the second voltage is near the data signal voltage; and

wherein the reference voltage turns off the switching transistor.

28. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 27, wherein the gate signal line has a potential that drops from the first voltage to the second voltage over a period of time.

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29. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 28, wherein the gate signal line potential drops exponentially over the period of time.

30. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 28, wherein the gate signal line potential drops linearly over the period of time.

31. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 28, wherein the gate signal line potential drops stepwise over the period of time.

32. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 27, wherein the first voltage is greater than the second voltage.

33. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 27, wherein the gate controller includes a timing controller.

34. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 27, wherein the gate controller includes analog switches that are controlled by a shift register.

35. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 27, wherein the gate signal line includes a distributed series resistance and a distributed capacitance.

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36. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 27, wherein the first voltage is applied before the data signal is applied.

37. (Previously Presented): The active matrix liquid crystal display apparatus of claim 27, wherein second voltage is ground.

38. (Previously Presented): A liquid crystal display (LCD) device, comprising:

a plurality of pixels arranged in rows and columns, wherein each pixel includes a pixel electrode and a switching device having a control electrode, a first electrode, and a second electrode that is connected to the pixel electrode;

a plurality of data signal lines, each connected to first electrodes of a column;

a plurality of scanning signal lines, each connected to control electrodes of a row;

a data driver for selectively applying data signals to the data lines; and

a gate driver connected to the plurality of scanning signal lines, said gate driver receiving first and second voltages and scanning clock signals;

wherein the gate driver outputs the first voltage on a selected gate line during the application of a data signal in response to a scanning clock signal, wherein the gate driver outputs the second voltage on the selected gate line during the application of the data signal, wherein the second voltage is applied after the first voltage, wherein the gate driver outputs a reference potential in response to a subsequent scanning clock signal after the application of the second voltage;

wherein each switching device having a gate electrode connected to the selected gate line applies the data signal to the pixel electrode in response to the first voltage;

wherein each switching device having a gate electrode connected to the selected gate line turns off in response to the reference potential; and

wherein the second voltage is substantially equal to a potential of the data signal.

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39. (Previously Presented): The LCD device of claim 38, wherein the gate driver sequentially changes the selected gate line.

40. (Previously Presented): The LCD device of claim 38, wherein the gate driver includes a switch that selectively provides the first voltage and the second voltage to the selected gate line.

41. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 38, wherein the gate signal line potential drops from the first voltage to the second voltage over a period of time.

42. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 41, wherein the gate signal line potential drops exponentially over the period of time.

43. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 41, wherein the gate signal line potential drops linearly over the period of time.

44. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 41, wherein the gate signal line potential drops stepwise over the period of time.

45. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 38, wherein the first voltage is greater than the second voltage.

F1 cont

46. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 38, wherein the gate driver includes a timing controller.

47. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 38, wherein the gate driver includes analog switches that are controlled by a shift register.

48. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 38, wherein the gate signal line includes a distributed series resistance and a distributed capacitance.

49. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 38, wherein the first voltage is applied before the data signal is applied.

50. (Previously Presented): The active matrix liquid crystal display apparatus of claim 38, wherein the second voltage is ground.

51. (Previously Presented): A method of driving an active matrix liquid crystal display apparatus, comprising:

applying a data signal to a data line;

applying a first voltage to a gate line such that the first voltage is applied when the data signal is applied;

applying a second voltage to the gate line after the first voltage is applied, but during the time that the data signal is applied;

applying a reference voltage to the gate line after the second voltage is applied, but during the time that the data signal is applied;

wherein the first voltage, which is greater than the potential of the data signal, turns on a switching transistor;

wherein the second voltage is substantially equal to the potential of the data signal; and

wherein the reference voltage, which is less than the potential of the data signal, turns off the switching transistor.

52. (Previously Presented): The method of driving according to claim 51, wherein the applied first voltage is greater than the applied second voltage.

53. (Previously Presented): The method of driving according to claim 51, wherein the gate line has a potential that drops exponentially from the application of the first voltage to the application of the second voltage.

54. (Previously Presented): The method of driving according to claim 51, wherein the gate line has a potential that drops linearly from the application of the first voltage to the application of the second voltage.

55. (Previously Presented): The method of driving according to claim 51, wherein the gate line has a potential that drops stepwise from the application of the first voltage to the application of the second voltage.

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56. (Previously Presented): An active matrix liquid crystal display apparatus, comprising:

a plurality of pixels including switching transistors each having a gate electrode, a first electrode and a second electrode connected to a pixel electrode;

a plurality of data signal lines each connected to the first electrode associated with any one of the transistors;

a plurality of gate signal lines each connected to the gate electrode associated with any one of the transistors; and

a gate driver connected to the plurality of the gate signal lines, said gate driver receiving a first gate voltage and a second gate voltage and outputting any one of the first gate voltage and the second gate voltage to drive the gate signal lines sequentially, said first gate voltage reducing a voltage level substantially to a threshold voltage level but enough to maintain an on-state of the

switching transistor prior to transitioning to the second gate voltage, wherein the second gate voltage has a voltage level that turns off the switching transistor.

57. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 56, wherein the first gate voltage reduces the voltage level prior to exciting of the successive gate signal lines.

58. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 56, wherein the first gate voltage reduces the voltage level exponentially.

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59. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 56, wherein the first gate voltage reduces the voltage level linearly.

60. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 56, wherein the first gate voltage reduces the voltage level stepwise.

61. (Previously Presented): The active matrix liquid crystal display apparatus as claimed in claim 56, wherein a minimum value of the first gate voltage is higher than a maximum value of the second gate voltage.

62. (Previously Presented): A method of driving an active matrix liquid crystal display apparatus including pixels defined by gate lines and signal lines, thin film transistors connected to the gate lines and the signal lines, and a gate driver connected to the gate lines and having a shift register, said method comprising:

applying a first gate voltage and a second gate voltage; the first gate voltage having a voltage level that turns on the switching transistor and the second gate voltage having a voltage level that turns off the switching transistor; and

supplying the first gate voltage and the second gate voltage selectively via a switching device, to the gate lines, said switching device being controlled by the shift register, said first gate voltage reducing a voltage level substantially to a threshold voltage level but enough to maintain an on-state of the switching transistor prior to transitioning to the second gate voltage.

63. (Previously Presented): The method as claimed in claim 62, wherein the first gate voltage is supplied to the gate lines during a time interval when the thin film transistors connected to the gate lines are turned on.

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64. (Previously Presented): The method as claimed in claim 62, wherein the shift register operates at a driving voltage having a logical voltage level.

65. (Previously Presented): The active matrix liquid crystal display apparatus of claim 56, further comprising:

a high level gate voltage generator providing the first gate voltage to the gate driver, the high level gate voltage generator comprising,

a high level voltage source providing a high level voltage, and

a voltage controller receiving the high level voltage and providing the first gate voltage having the voltage level reduced substantially to the threshold voltage level prior to excitation of a successive gate signal line.

66. (Previously Presented): The active matrix liquid crystal display apparatus of claim 65, wherein the voltage controller comprises a switch switching the first gate voltage between the high level voltage and a fixed voltage prior to excitation of the successive gate signal line.

67. (Previously Presented): The active matrix liquid crystal display apparatus of claim 66, wherein the fixed voltage is ground.

68. (Previously Presented): The active matrix liquid crystal display apparatus of claim 65, wherein the gate driver includes a switch connected to an output of the high level gate voltage generator, said switch selectively providing the first gate voltage and the second gate voltage to the plurality of the gate signal lines.

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69. (Previously Presented): The active matrix liquid crystal display apparatus of claim 65, further comprising a low level gate voltage generator providing the second gate voltage to the gate driver.

70. (Previously Presented): The active matrix liquid crystal display apparatus of claim 69, wherein the gate driver includes a switch connected to an output of the high level gate voltage generator and an output of the low level gate voltage generator, said switch switching between the output of the high level gate voltage generator and the output of the low level gate voltage generator to provide the first and second gate voltage signals respectively to the plurality of the gate signal lines.

71. (Previously Presented): A liquid crystal display (LCD) device, comprising:

a plurality of pixels arranged in rows and columns, each pixel including, a pixel electrode, and a switching device having a control electrode, a first electrode, and a second electrode connected to the pixel electrode;

a plurality of data signal lines each connected to the first electrode of the switching device of each pixel in one of the columns;

a plurality of scanning signal lines each connected to the control electrode of the switching device of each pixel in one of the rows; and

a gate driver connected to the plurality of scanning signal lines, said gate driver receiving first and second control voltages and a scanning clock signal and, in response to the scanning clock signal, successively outputting the first control voltage to the scanning signal lines to drive the scanning signal lines,

wherein the switching device of each pixel responds to the first control voltage to connect the first electrode with the pixel electrode, and responds to the second control voltage to disconnect the first electrode from the pixel electrode,

wherein a voltage level of the first control voltage received by the gate driver changes during a period of the scanning clock signal prior to the driver selecting a successive scanning line, and

wherein the voltage level of the first control voltage turns on the switching device and the voltage level of the first control voltage is reduced substantially to a threshold voltage level but enough to maintain an on-state of the switching device during the period of the scanning clock signal prior to the driver selecting the successive scanning line.

72. (Previously Presented): The LCD device of claim 71, further comprising:

a high level control voltage generator providing the first control voltage to the driver, the high level control voltage generator comprising,

a high level voltage source providing a high level voltage, and

a voltage controller receiving the high level voltage and providing the first control voltage having the voltage level reduced substantially to the threshold voltage level prior to excitation of the successive gate signal line.

73. (Previously Presented): The LCD device of claim 72, wherein the voltage controller comprises a switch switching the first control voltage between the high level voltage and a fixed voltage prior to the driver selecting the successive scanning line.

74. (Previously Presented): The LCD device of claim 72, wherein the driver includes a switch connected to an output of the high level gate voltage generator, said switch selectively providing the first control voltage and the second control voltage to the plurality of scanning signal lines.

75. (Previously Presented): The LCD device of claim 74, further comprising a low level gate voltage generator providing the second control voltage to the driver.

76. (Previously Presented): A method of driving a liquid crystal display device, having a plurality of gate electrodes, a plurality of contact electrodes, and a plurality of pixel electrodes connected to the plurality of gate electrodes, the method comprising:

providing a plurality of first lines and a plurality of scanning lines that are arranged in a matrix pattern, wherein the plurality of first lines connect to the plurality of contact electrodes, and wherein the plurality of scanning lines connect to the plurality of gate electrodes;

sequentially applying a first voltage to each of the plurality of scanning lines, wherein the first voltage electrically connects the plurality of contact electrodes to the plurality of pixel electrodes; and

sequentially applying a second voltage to each of the plurality of scanning lines, wherein the second voltage electrically disconnects the plurality of contact electrodes from the plurality of pixel electrodes,

wherein the second voltage is sequentially applied to each of the plurality of scanning lines after the application of the first voltage to each of the plurality of scanning lines but prior to the sequential application of the first voltage to another one of the plurality of scanning lines, said first voltage reducing a voltage level substantially to a threshold voltage level but enough to maintain a connection between the plurality of contact electrodes to the plurality of pixel electrodes prior to applying the second gate voltage.

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77. (Previously Presented): The method of driving according to claim 76, wherein the first voltage is greater than said second voltage.

78. (Previously Presented): The method of driving according to claim 76, wherein the first voltage reduces the voltage level exponentially.

79. (Previously Presented): The method of driving according to claim 76, wherein the first voltage reduces the voltage level linearly.

80. (Previously Presented): The method of driving according to claim 76, wherein the first voltage reduces the voltage level stepwise.

81. (Previously Presented): The method of driving according to claim 76, further comprising:

generating the first voltage using a first voltage source;

generating the second voltage using a second voltage source; and

applying the first and second voltage to the plurality of scanning lines using a switch, the switch being selectively connectable to both the first and second voltage sources, wherein the switch connects to the first and second voltage sources prior to the application of the first voltage to a successive one of the plurality of scanning lines.

82. (New): An active matrix liquid crystal display apparatus, comprising:

a pixel having a pixel electrode and a switching transistor, the switching transistor including a gate electrode, a source electrode, and a drain electrode connected to the pixel electrode;

a data signal line connected to the source electrode;

a gate signal line connected to the gate electrode;

a gate driver connected to the gate signal line and outputting a scanning signal having first and second voltage levels for driving the gate signal lines sequentially, the gate driver including means for changing a falling edge of the scanning signal; and

a data driver connected to the data signal line for applying a data signal to the data signal line.

83. (New): The active matrix liquid crystal display apparatus as claimed in claim 82, wherein the falling edge has a linear, an exponential, a step or a ramp function shape.

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84. (New): The active matrix liquid crystal display apparatus as claimed in claim 82, wherein the falling edge has a slower slope than a rising edge of the scanning signal.